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SOIL SURVEY INTERPRETATIONS FOR WOODLANDS

IN THE
OZARK HIGHLAND AREA

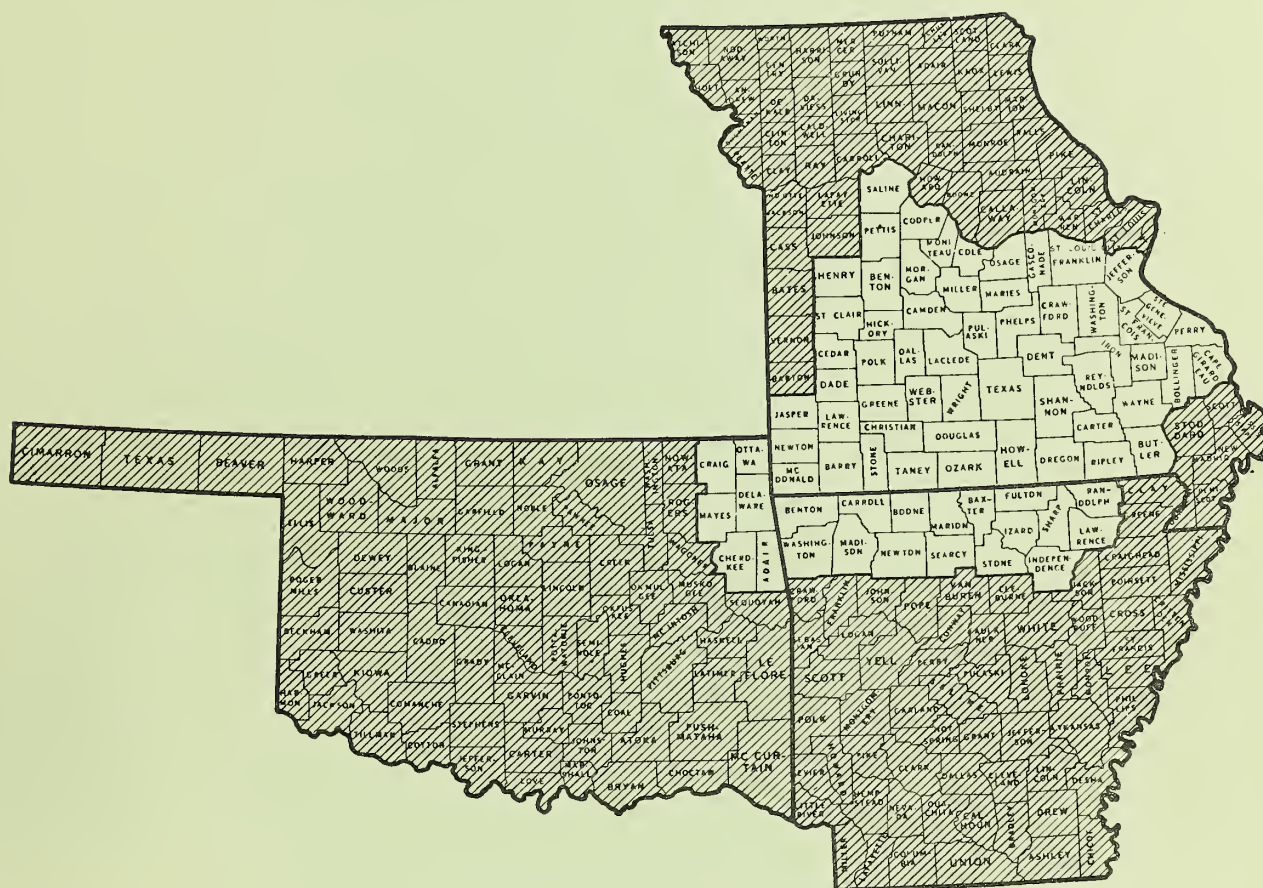
OF

ARKANSAS, MISSOURI, AND OKLAHOMA

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PROGRESS REPORT W-6 - NOVEMBER 1968

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Fort Worth, Texas

This report contains interpretations of soil surveys for woodland use and management in the Ozark Highlands area of Arkansas, Missouri and Oklahoma. The purpose is to provide currently available knowledge about soils as they relate to the establishment, growth, management, and harvesting of wood crops for the use of foresters, agricultural workers, woodland owners and woodland managers. The information will be used by the Soil Conservation Service and cooperating agencies in the development of technical guides, soil handbooks and soil survey reports.

Field information was gathered by teams of foresters and soil scientists. Representatives of Federal and State agencies, the wood-using industry, and others cooperated in gathering field data. The interpretations presented herein are made for use with soil surveys.

Table 2, SOIL RATINGS FOR WOODLAND USE, contains evaluations of productivity, management problems, and species suitability for the major soils in the Ozark Highlands. In column one (1) the soils are listed alphabetically by series. Separate ratings are made of phases of soil series where differences among phases are significant for woodland use or management.

Column two (2) contains a list of some of the commercially important tree species which are adapted to the soil in column one. These are the tree species which woodland managers generally favor in intermediate or improvement cuttings, after considering the form and vigor of individual trees. Priority among species will be influenced by local marketability and the owners objectives, as well as the quality of wood products from a given species.

Column three (3) gives the average site index for the most important species listed in column two. The standard deviation is shown as a plus or minus figure (+) for each species where five or more plots were taken

on the soils listed in column one. The site index curves used for each tree species are shown in Table 1, GUIDE FOR WOODLAND SUITABILITY CLASSES. An asterisk (*) following the site index rating indicates the rating is an estimate based on the same species on a similar soil, or by comparison with another species on the same soil. Site index is the average height of dominant trees at age 30 for cottonwood, age 35 for sycamore, and age 50 for all other species.

Column four (4) gives the range of site index of the most important tree species. The range in site index values is dependent on soil physical conditions, aeration, and nutrient and moisture availability during the growing season.

Column five (5) shows the potential erosion hazard of the soil in woodland use following cutting operations, or where the soil is exposed along roads, trails, firebreaks, or log-yarding areas. A rating of slight indicates that problems of erosion control are unimportant. A rating of moderate indicates some attention must be given to prevent unnecessary soil erosion. A rating of severe indicates that intensive treatments, or special equipment and methods of operation should be planned to minimize soil erosion. The potential erosion hazard is based on slope, soil depth, and erodibility, and soil loss tolerance.

Column six (6) includes evaluation of equipment restrictions. Ratings reflect limitations in the use of equipment for managing or harvesting the crop. A rating of slight indicates equipment use is seldom limited in kind or time of year. A rating of moderate indicates a need for modified equipment or seasonal restrictions due to slope, stones, obstructions, soil wetness, flooding, or overflows. A rating of severe indicates the need for specialized equipment due to one or more of the factors listed above.

Column seven (7) indicates the degree of expected seedling mortality during the first two growing seasons after planting or seeding. Normal rainfall, adequate site preparation, good planting stock, proper planting methods, and appropriate protection and cultivation are assumed. A rating of slight indicates that unsatisfactory survival on less than 25 percent of the area is likely. A rating of moderate indicates that unsatisfactory survival is likely on 25 to 50 percent of the area planted. A rating of severe indicates that unsatisfactory survival is likely on more than 50 percent of the area.

It will be noted that aspect on slopes greater than 20 percent is ordinated as being "hot" or "cool" slopes. Hot slopes include those which have south and west aspects; from 135 degrees azimuth (clockwise) to 315 degrees; and cool slopes are those which have north and east aspects, from 315 degrees (clockwise) to 135 degrees. Column seven implies that seedling mortality is greater on hot slopes than on cool slopes.

Column eight (8) lists several suitable tree species for planting on the soil named in column one. The list may include some species which do not normally occur in native stands on the designated soil or in this physiographic area, as well as some of the important species listed in column two.

Column nine (9) shows the ordination of the soils into a woodland suitability group. A woodland suitability group is made up of kinds of soil that are capable of producing similar kinds of wood crops, that need similar management to produce these crops, and that have about the same potential productivity. The ordination system and the suitability group symbols are explained in the following paragraphs.

The first element of the group symbol indicates the woodland suitability class. It expresses site quality by an arabic numeral ranging from 1 to 5, with class 1 the highest in potential productivity, followed by class 2, 3, 4, and 5. It is based on the average site index of one or more indicator forest types or tree species, as shown in Table 1, GUIDE FOR WOODLAND SUITABILITY CLASSES. The indicator species are underscored in column two of Table 2.

The second element in the symbol indicates the suitability subclass. It expresses selected soil properties that cause moderate to severe hazards or limitations in woodland use or management, by one of the following lower case arabic letters:

Subclass x (stoniness or rockiness). Soils having restrictions or limitations for woodland use or management due to stones or rocks.

Subclass w (excessive wetness). Soils in which excessive water, either seasonally or year long, causes significant limitations for woodland use or management. These soils have restricted drainage, high water tables, or overflow hazards which adversely affect either stand development or management.

Subclass d (restricted rooting depth). Soils with restrictions or limitations for woodland use or management due to restricted rooting depths. Soils shallow to hard rock, hardpan, or other layers in the soil that restrict roots are examples.

Subclass c (clayey soils). Soils having restrictions or limitations for woodland use or management due to the kind or amount of clay in the upper portion of the soil profile.

Subclass s (sandy soils). Sandy soils with little or no textural B horizons and having moderate to severe restrictions or limitations for woodland use or management. These soils impose equipment limitations, have low moisture-holding capacity, and normally are low in available plant nutrients.

Subclass f (fragmental or skeletal soils). Soils with restrictions or limitations for woodland use or management due to large amounts of coarse fragments in the profile over 2 mm and less than 10 inches, but includes flaggy soils.

Subclass r (relief or slope steepness). Soils with restrictions or limitations for woodland use or management due only to steepness of slope.

Subclass o (slight or no limitations). Soils with no significant restrictions or limitations for woodland use or management.

Some kinds of soil may have more than one set of subclass characteristics.

Priority in placing each kind of soil into a subclass is in the order that the subclass characteristics are listed above.

The third element in the symbol indicates the degree of hazards or limitations, and the general suitability of the soils for certain kinds of trees. The three management problems considered here are: (1) erosion hazard, (2) equipment restrictions, and (3) seedling mortality.

The numeral 1 indicates soils with no to slight management problems, and they are best suited for needleleaf trees.

The numeral 2 indicates soils with one or more moderate management problems, and they are best suited for needleleaf trees.

The numeral 3 indicates soils with one or more severe management problems, and they are best suited for needleleaf trees.

The numeral 4 indicates soils with no to slight management problems, and they are best suited for broadleaf trees.

The numeral 5 indicates soils with one or more moderate management problems, and they are best suited for broadleaf trees.

The numeral 6 indicates soils with one or more severe management problems, and they are best suited for broadleaf trees.

The numeral 7 indicates soils with no to slight management problems, and they are suitable for either needleleaf or broadleaf trees.

The numeral 8 indicates soils with one or more moderate management problems, and they are suitable for either needleleaf or broadleaf trees.

The numeral 9 indicates soils with one or more severe management problems, and they are suitable for either needleleaf or broadleaf trees.

The numeral 0 indicates the soils are not suitable for the production of major commercial wood products.

TABLE 1 - GUIDE FOR WOODLAND SUITABILITY CLASSES
OZARK HIGHLANDS

	:	1	:	2	:	3	:	4	:	5
Indicator Forest	:	Very	:	High	:	Moderately	:	Moderate	:	Low
Type or Species	:	High	:		:	High	:		:	
	:		:		:		:		:	
	:	Site Index								
	:		:		:		:		:	
Cottonwood	(1):	106+	:	96-105	:	86-95	:	76-85	:	75-
Yellow-poplar	(2):	106+	:	96-105	:	86-95	:	76-85	:	75-
Sweetgum	(3):	96+	:	86-95	:	76-85	:	66-75	:	65-
Water oaks	(4):	96+	:	86-95	:	76-85	:	66-75	:	65-
Nuttall oak	(5):	96+	:	86-95	:	76-85	:	66-75	:	65-
Loblolly pine	(6):	96+	:	86-95	:	76-85	:	66-75	:	65-
Shortleaf pine	(6):	86+	:	76-85	:	66-75	:	56-65	:	55-
Sou. red oak	(7):	86+	:	76-85	:	66-75	:	56-65	:	55-
Redcedar	(8):	66+	:	56-65	:	46-55	:	36-45	:	35-
	:		:		:		:		:	

- (1) Broadfoot, W. M., 1960, Field Guide for Evaluating Cottonwood Sites, USDS Occ. Paper 178 (Fig. 4)
- (2) Doolittle, W. T., 1957, Site Index Curves for Yellow-poplar So. Appalachians.
- (3) Broadfoot, W. M., 1959, Guide for Evaluating Sweetgum Sites, USFS Occ. Paper 176 (Fig. 4)
- (4) Broadfoot, W. M., 1963, Guide for Evaluating Water Oak Sites in the Mid-South, USFS Res. Paper SO-1 (Fig. 4).
- (5) Broadfoot, W. M., Unpublished manuscript. Sou. For. Expmt. Sta., 1966.
- (6) Coile, T. S. and F. X. Schumacher, Jour. For. 53:432-435 (Fig. 4 and 8)
- (7) Schnur, L. G., 1937, Yield, Stand and Volume Tables for Even-Aged Upland Oak Forest, USDA Tech. Bull. 560, Fig. 2.
- (8) TVA 1948, Site Curves, E. Redcedar, Tennessee Valley.

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 1 of 10

Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species $\frac{1}{2}$	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Agnes gravelly fine sandy loam, gravelly silt loam, loam, gravelly loamy fine sand, loamy fine sand 0-20% slopes loamy fine sand 20%+ slopes	Red oaks Red cedar Loblolly pine <u>Shortleaf pine</u>	60 * 40 * 65 60 *	56-65 36-45 60-70 56-65	Slight	Slight	Slight	Shortleaf pine Red cedar Loblolly pine	401
stony loamy fine sand 1-20% slopes				Moderate to Severe	Moderate to Severe	Slight- cool Moderate- hot		4r3
stony loamy fine sand 1-20% slopes				Slight	Moderate	Slight- cool Moderate- hot		4r2
stony loamy fine sand 20%+ slopes				Moderate to Severe	Moderate to Severe	Moderate- cool Severe- hot		
Albertville gravelly loamy fine sand 1-20% slopes	Shortleaf pine Red cedar Loblolly pine	60 * 40 * -	56-65 36-45	Slight	Slight	Slight	Shortleaf pine Red cedar Loblolly pine	401
Ashe cherty silt loam 0-20% slopes	Upland oaks <u>Shortleaf pine</u> Red cedar	60 55 35	56-65 50-60 30-40	Slight	Slight	Slight	Shortleaf pine Red cedar Loblolly pine	501
Ashton cherty silt loam, silt loam, 0-3% slopes, undulating	Shortleaf pine Red oaks Black walnut White oaks Sycamore Cottonwood Water oaks Shumard oak Black locust Black cherry	80 * 80 * - 70 80 80 - - - - -	76-85 76-85 - 66-75 76-85 76-85 - - - -	Slight	Slight	Slight	Black walnut Shumard oak Cottonwood 3/ Sycamore Red oaks White oak Black locust White oaks Shortleaf pine Loblolly pine	207
Bates fine sandy loam, 0-12% slopes	Shortleaf pine Red cedar	55 35	50-60 30-40	Slight	Slight	Slight	Shortleaf pine Red cedar	501
Baxter cherty silt loam coarse cherty silt loam 0-20% slopes 20%+ slopes	Shortleaf pine Red oaks White oak Black walnut Black locust Black cherry Red cedar	56+4 61+7 58 * - - - 35 *	50-60 56-65 56-65 - - - 30-40	Slight	Slight	Slight	Shortleaf pine Red oaks 3/ Black walnut 3/ Black locust 3/ Red cedar	407
silt loam 0-20% slopes 20%+ slopes	Shortleaf pine Red oaks Red cedar Black walnut Black locust Black cherry White oak	56+2 70 * 45 * - - - 65 *	60-70 66-75 40-50 - - - 60-70	Slight	Slight	Slight		307
				Moderate to Severe	Moderate to Severe	Slight- cool Moderate- hot		4r5
				Moderate to Severe	Moderate to Severe	Slight- cool Moderate- hot		3r9
Bruno loamy sand 0-1% slopes	Sweetgum Cottonwood Sycamore Loblolly pine Shortleaf pine	80 90 80 - -	76-85 86-95 76-85 -	Slight	Moderate	Severe	Cottonwood 4/ Sycamore 4/ Loblolly pine Shortleaf pine Sweetgum	3s9

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 2 of 10

Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Captina silt loam, silt loam, thick surface, cherty silt loam, 0-12% slopes, stony loam, 1-14% slopes	Shortleaf pine Red oaks Red cedar Black walnut Black locust Black cherry Loblolly pine	58+6 64 * 40 * - - - -	56-65 60-70 36-45 - - - -	Slight	Slight Moderate	Slight	Shortleaf pine Loblolly pine Red cedar Black walnut 3/ Black locust 3/ Red oaks 3/	407 4x8
Cherokee silt loam, 0-1% slopes	Water oak Sweetgum Green ash Hackberry Catalpa Osage orange	55 55 - - - -	50-60 50-60 - - - -	Slight	Slight	Moderate	Green ash Catalpa 4/ Osage orange 4/	5c5
Christian fine sandy loam, gravelly fine sandy loam, gravelly loamy fine sand, 1-20% slopes, 20%+ slopes	Shortleaf pine Red oak Red cedar Black walnut Black locust White oak Black cherry Loblolly pine	57+5 67 * 40 * - - - - -	56-65 60-70 36-45 - - - - -	Slight	Slight	Slight	Shortleaf pine Loblolly pine Red cedar Black walnut 3/ Black locust 3/ Red oaks 3/	407 4x9
stony sandy loam, stony loamy fine sand, 1-20% slopes, 20%+ slopes				Moderate to Severe	Moderate to Severe	Slight-cool Moderate-hot		4x8
stony sandy loam, stony loamy fine sand, 1-20% slopes, 20%+ slopes				Slight	Moderate	Slight		4x8
stony sandy loam, stony loamy fine sand, 1-20% slopes, 20%+ slopes				Moderate to Severe	Moderate to Severe	Slight-cool Moderate-hot		4x8
Fine sandy loam 3-12% slopes, severely eroded	Shortleaf pine Red cedar Loblolly pine	50 * 30 * -	46-55 26-35 -	Slight	Slight	Slight	Loblolly pine Shortleaf pine Red cedar	5c1
Clarksville cherty silt loam 0-20% slopes, 20%+ slopes	Shortleaf pine Red oak Red cedar Loblolly pine Black walnut Black locust White oak	55+6 64+8 35 * - - -	50-60 60-70 30-40 - - -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red oaks 3/ Black walnut 3/ Black locust 3/ Red cedar	4f8
Clarksville cherty silt loam 0-20% slopes, 20%+ slopes	Shortleaf pine Red oak Red cedar Loblolly pine Black walnut Black locust White oak	55+6 64+8 35 * - - -	50-60 60-70 30-40 - - -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red oaks 3/ Black walnut 3/ Black locust 3/ Red cedar	4f8
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Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
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Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 58 35 -	50-60 56-65 30-40 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5c2
Colbert cherty loam, cherty silt loam, fine sandy loam, silt loam 1-20% slopes, 20%+ slopes								

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 3 of 10

Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Conasauga gravelly fine sandy loam, silt loam, silty clay loam 1-20% slopes 20%+ slopes	Shortleaf pine Red cedar Loblolly pine	55 * 35 *	50-60 30-40	Slight	Slight	Moderate	Shortleaf pine Red cedar Loblolly pine	5c2
Stacy sandy loam 1-20% slopes 20%+ slopes				Moderate to Severe	Moderate to Severe	Moderate to cool Severe-hot		5d2
Corydon cherty silt loam, fine cherty silt loam, silt loam, stony fine sandy loam, stony silt loam, stony silty clay loam 1-12% slopes 12-20% slopes 20%+ slopes	Shortleaf pine Red cedar Loblolly pine	50 * 30 * -	46-55 26-35	Slight	Slight	Moderate	Shortleaf pine Red cedar Loblolly pine	5d2
				Moderate to Severe	Slight to Moderate to Severe	Moderate to cool Severe-hot		
Coulstone cherty silt loam 0-20% slopes 20%+ slopes	Shortleaf pine Red oak Red cedar Loblolly pine Black locust Black walnut White oak	55 * 64 * 35 * - - - -	50-60 60-70 30-40	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red oaks 3/ Black walnut 3/ Black locust 3/ Red cedar	4f8
				Moderate to Severe	Moderate to Severe	Moderate to cool Severe-hot		
Craig cherty silt loam, silt loam 0-8% slopes	Shortleaf pine Red cedar Loblolly pine	50 * 30 * -	46-55 26-35	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	5f2
Culleoka flaggy silt loam 1-12% slopes 12-20% slopes	Shortleaf pine Red cedar Loblolly pine	50 * 30 * -	46-55 26-35	Slight	Slight	Severe	Shortleaf pine Loblolly pine Red cedar	5f3
				Moderate				
Cumberland fine sandy loam, gravelly silt loam, loam, silt loam 0-12% slopes	Shortleaf pine Red oak Red cedar Black walnut Sweetgum Loblolly pine White oak	70 * 70 * 50 * - - - -	66-75 66-75 46-55	Slight	Slight	Slight	Black walnut Black locust Shortleaf pine Loblolly pine Red oaks White ash Red cedar	3o7
Decatur cherty silt loam, silt loam, cherty silt loam, thick surface, coarse cherty silt loam 1-20% slopes 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine Black walnut Black locust Black cherry White oak	66 * 67+4 45 * - - - - -	60-70 66-75 40-59	Slight	Slight	Slight	Black walnut 3/ Black locust 3/ Red oaks 3/ Shortleaf pine Loblolly pine Red cedar	3o7
				Moderate to Severe	Moderate to Severe	Slight to cool Moderate-hot		3r9

Page 4 of 10

4-27339 11-68

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 5 of 10

Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Fayetteville Fine sandy loam, loamy fine sand, 1-20% slopes stony fine sandy loam, 1-20% slopes 20%+ slopes	Shortleaf pine Red oaks White oak Loblolly pine Black walnut Red cedar Black cherry Black locust	73+4 70 * 65 * - - 50 * - -	66-75 66-75 60-70 - - 46-55 - -	Slight Moderate to Severe	Slight Moderate Moderate to Severe	Slight Moderate Slight-cool Moderate-hot	Shortleaf pine Loblolly pine Red cedar Black walnut Red oaks Black locust	3o7 - 3x8 - -
Fullerton cherty silt loam, coarse cherty silt loam, 0-20% slopes 20%+ slopes	Shortleaf pine Red oaks White oak Black walnut Black locust Black cherry Red cedar	56 * 61 * 58 * - - - 35 *	50-60 56-65 56-65 - - 30-40 -	Slight Moderate to Severe	Slight Moderate to Severe	Slight Slight-cool Moderate-hot	Shortleaf pine Red oaks 3/ Black walnut 3/ Black locust 3/ Red cedar Loblolly pine	4o7 - 4r9 - -
silt loam 0-20% slopes 20%+ slopes	Shortleaf pine Red oaks Red cedar Black walnut Black locust Black cherry White oak	66 * 70 * 45 * - - - 65 *	60-70 66-75 40-50 - - - 60-70	Slight Moderate to Severe	Slight Moderate to Severe	Slight Slight-cool Moderate-hot	- 3o7 - - - 3r9 - -	
Gasconade rocky silty clay, gravelly silty clay loam, stony silty clay loam, 1-12% slopes 12-20% slopes 20%+ slopes	Shortleaf pine Red cedar Hackberry Black locust Native vegetation White ash	50 and 30 and - - - -	less * less * - - - -	Slight Moderate to Severe	Moderate Severe	Moderate to Severe	Red cedar Shortleaf pine Black locust 3/ Native vegetation White ash	5d9
Gerald silt loam 0-1% slopes	Water oak Sweetgum Green ash Hackberry Catalpa Osage orange	55 55 - - - -	50-60 50-60 - - - -	Slight	Slight	Moderate	Green ash Catalpa 4/ Osage orange 4/	5c5
Greendale cherty silt loam 0-20% slopes 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine Black walnut Black cherry Black locust White oak	62 * 73 * 40 * - - - - -	60-70 66-75 36-45 - - - - -	Slight Moderate to Severe	Slight Moderate to Severe	Slight Slight-cool Moderate-hot	Shortleaf pine Loblolly pine Red cedar Black walnut Black locust Red oaks	3o7 - 3r9 - -
Hobson silt loam 2-14% slopes	Shortleaf pine	61 *	56-65	Slight	Slight	Slight	Shortleaf pine Red cedar	4o1

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 6 of 10

Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>Huntington</u> fine sandy loam, gravelly fine sandy loam, gravelly silt loam, silt loam, 0-8% slopes, undulating	Shortleaf pine Red oaks Cottonwood Sycamore Sweetgum White oak Loblolly pine Black locust Black walnut Black cherry White ash Water oaks Shumard oak	80 80 * 90 85 80 75 - - - - - - -	76-85 76-85 86-95 80-90 76-85 70-80 - - - - - - -	Slight	Slight	Slight	Shortleaf pine Loblolly pine Red oaks Black walnut Black locust Sycamore 4/ Cottonwood 4/ Shumard oak White oak Sweetgum White ash	2o7
<u>Jay</u> silt loam, silt loam shallow, silty clay loam 1-12% slopes	Shortleaf pine Red oaks Red cedar Loblolly pine Black walnut Black locust Black cherry White oak	60 * 65 * 40 * - - - - -	- - - - - - - -	Slight	Slight	Slight	Shortleaf pine Loblolly pine Red cedar Red oaks 3/ Black walnut 3/ Black locust 3/	4o7
<u>Landisburg</u> cherty silt loam, silt loam 1-12% slopes	Shortleaf pine Red oaks Red cedar Loblolly pine Black walnut Black locust Black cherry	60 * 65 * 40 * - - - -	56-65 60-70 36-45 - - - -	Slight	Slight	Slight	Shortleaf pine Loblolly pine Red cedar Red oaks 3/ Black walnut 3/ Black locust 3/	4o7
<u>Lawrence</u> silt loam 0-3% slopes	Shortleaf pine Red oak Red cedar Sweetgum Loblolly pine	60 * 60 * 40 * - -	56-65 56-65 36-45 - -	Slight	Moderate	Slight	Shortleaf pine Loblolly pine Red cedar	4w2
<u>Lebanon</u> silt loam 0-14% slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	57 * 65 * 40 * -	56-60 60-70 36-45 -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar	4o7
<u>Lindside</u> clay loam, gravelly silt loam, loam, silt loam, 0-8% slopes, undulating	Shortleaf pine Red oaks Sweetgum Shumard oak Cottonwood Sycamore Black walnut Water oaks Green ash Black locust Black cherry	80 * 80 * 80 80 80 75 - - - - -	76-85 76-85 76-85 76-85 76-85 70-80 - - - - -	Slight	Slight	Slight	Shortleaf pine Black walnut Loblolly pine Cottonwood 4/ Sycamore 4/ Shumard oak Sweetgum Black locust White ash White oak	2o7
<u>Locust</u> fine sandy loam, gravelly fine sandy loam, gravelly loam, loam, loamy fine sand, 0-20% slopes 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine Black walnut Black locust Sweetgum	64 60 45 - - - -	60-70 56-65 40-50 - - - -	Slight	Slight	Slight	Black walnut 3/ Loblolly pine Shortleaf pine Red cedar Red oaks 3/ Black locust 3/	4o7
<u>stony fine sandy loam, 1-20% slopes</u>				Moderate to Severe	Moderate to Severe	Slight- cool Moderate hot		4r9
				Slight	Moderate	Slight		4x8

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 7 of 10

Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Melvin silt loam 0-3% slopes, undulating	Cottonwood Sycamore Shumard oak Sweetgum Water oak	80 80 75 80 80	76-85 76-85 70-80 76-85 76-85	Slight	Severe	Severe	Shumard oak Cottonwood 4/ Sycamore 4/ Sweetgum Water oaks Green ash	3w6
Minvale cherty silt loam, silt loam, 1-20% slopes 20%+ slopes	Shortleaf pine Red oaks Red cedar Loblolly pine Black walnut Black locust Black cherry White oak	61 * 70 * 40 * - - - - -	56-65 65-75 36-45 - - - - -	Slight Moderate to Severe	Slight Moderate to Severe	Slight Slight- cool Moderate- hot	Shortleaf pine Loblolly pine Red oaks Black walnut Black locust Red cedar	3o7 3-9
Mountview silt loam 0-12% slopes	Shortleaf pine Red oaks Red cedar Loblolly pine	55 * 60 * 35 *	50-60 56-65 30-40	Slight	Slight	Slight	Shortleaf pine Loblolly pine Red cedar	5o1
Newark silt loam 0-3% slopes, undulating	Sweetgum Cottonwood Sycamore Shumard oak Water oaks Green ash Red oaks Overcup oak	80 90 85 80 80 - - -	76-85 86-95 80-90 76-85 76-85 - - -	Slight	Moderate	Moderate	Shumard oak Cottonwood 4/ Sycamore 4/ Sweetgum Green ash Water oaks	3w5
Newtonia silt loam 0-12% slopes	Shortleaf pine Red oak Black walnut Loblolly pine Sweetgum Red cedar Black locust Black cherry	70 * 70 * - - 70 50 - -	66-75 66-75 - - 66-75 46-55 - -	Slight	Slight	Slight	Black walnut Black locust Loblolly pine Shortleaf pine Red oaks Sweetgum Red cedar	3o7
Nixa cherty silt loam, silt loam, 1-20% slopes	Shortleaf pine Red oaks White oak Red cedar Black walnut Loblolly pine Black locust Black cherry	58+5 62+6 60 * 40 * - - - -	56-65 56-65 56-65 36-45 - - - -	Slight	Slight	Moderate	Shortleaf pine Loblolly pine Red cedar Black walnut 3/ Black locust 3/ Red oaks 3/	4r8
Pembroke gravelly fine sandy loam, gravelly silt loam, silt loam 1-12% slopes	Shortleaf pine Red oaks Red cedar Black walnut White oak White ash Black cherry Black locust Loblolly pine	70 * 70 * 50 - - - - - -	66-75 66-75 46-55 - - - - - -	Slight	Slight	Slight	Shortleaf pine Loblolly pine Black walnut Black locust Red oaks White ash Red cedar	3o7
Pickwick silt loam 1-3% slopes	Shortleaf pine Loblolly pine Red oaks Red cedar Black walnut Black locust Sweetgum White oak	70 80 70 50 - - - -	66-75 76-85 66-75 46-55 - - - -	Slight	Slight	Slight	Black walnut 3/ Black locust 3/ Loblolly pine Shortleaf pine Red oak Red cedar	3o7

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 8 of 10

Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Pineville loamy fine sand 0-20% slopes -- 20%+ slopes	Shortleaf pine Red cedar Loblolly pine	59+6 40* -	56-65	Slight Moderate to Severe	Slight Moderate to Severe	Severe	Shortleaf pine Loblolly pine Red cedar	4s3
Razort fine sandy loam, gravelly fine sandy loam, gravelly silt loam, silt loam, 0-8% slopes, undulating	Shortleaf pine Red oaks Cottonwood Sycamore Sweetgum White oak Loblolly pine Black locust Black walnut Black cherry White ash Water oaks Shumard oak	80 80* 90 85 80 75 - - - - - - -	76-85 76-85 86-95 80-90 76-85 70-80	Slight	Slight	Slight	Shortleaf pine Loblolly pine Red oaks Black walnut Black locust Sycamore 4/ Cottonwood 4/ Shumard oak White oak Sweetgum White ash	2o7
Robertsville silt loam 0-3% slopes	Cottonwood Sycamore Shumard oak Sweetgum Water oaks Green ash Overcup oak	80 80 75 75 75 - -	76-85 76-85 70-80 70-80 70-80	Slight	Severe	Severe	Shumard oak Cottonwood 4/ Sycamore 4/ Sweetgum Water oaks Green ash	4w6
Russellville silt loam 0-12% slopes	Shortleaf pine Red cedar Red oaks Sweetgum Loblolly pine Black walnut Black cherry Black locust	60 40 65 65 - - - -	56-65 36-45 60-70 60-70	Slight	Slight	Slight	Loblolly pine Shortleaf pine Red cedar Black walnut 3/ Red oaks 3/ Sweetgum 3/ Black locust 3/ White ash 3/	4o7
Sallisaw gravelly silt loam, silt loam, 0-8% slopes	Shortleaf pine	53	46-55	Slight	Slight	Slight	Shortleaf pine Loblolly pine Red cedar	5o1
Samba silt loam, silt loam (mounded), silty clay, silty clay (mounded), 0-3% slopes	Water oaks Sweetgum Loblolly pine Shortleaf pine	70 70 70 65	66-75 66-75 66-75 60-70	Slight	Moderate	Moderate	Sweetgum Loblolly pine Shortleaf pine	4w8
Sango silt loam 0-3% slopes	Shortleaf pine Red oak Red cedar Sweetgum Loblolly pine	60* 60* 40* - -	56-65 56-65 36-45	Slight	Moderate	Slight	Shortleaf pine Loblolly pine Red cedar	4w2
Sloan silt loam, silt loam (mounded), silty clay, silty clay (mounded), 0-3% slopes	Water oaks Sweetgum Loblolly pine Shortleaf pine	70 70 70 65	66-75 66-75 66-75 60-70	Slight	Moderate	Moderate	Sweetgum Loblolly pine Shortleaf pine	4w8

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 9 of 10

Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Sogn rocky silty clay, gravelly silty clay loam, stony silty clay loam, 1-12% slopes 12-20% slopes 20%+ slopes	Shortleaf pine Red cedar Hackberry Black locust Native vegetation White ash	50 and 30 and	less * less *	Slight Moderate Severe	Moderate Severe	Moderate to Severe	Red cedar Shortleaf pine Black locust 3/ Native vegetation White ash	5d9
Staser silt loam, gravelly loam 0-3% slopes	Shortleaf pine Red oaks Cottonwood Sycamore Sweetgum White oak Loblolly pine Black locust Black walnut Black cherry White ash Water oaks Shumard oak	80 80 * 90 85 80 75 - - - - - - -	76-85 76-85 86-95 80-90 76-85 70-80 - - - - - -	Slight	Slight	Slight	Shortleaf pine Loblolly pine Red oaks Black walnut Black locust Sycamore 4/ Cottonwood 4/ Shumard oak White oak Sweetgum White ash	2o7
Summit silty clay loam 0-3% slopes stony silty clay loam 0-20% slopes 20%+ slopes	Red cedar Water oaks Hackberry Green ash	35 - - -	30-40	Slight Moderate to Severe	Moderate Severe	Moderate Moderate cool Severe- hot	Red cedar Green ash Catalpa 4/ Osage orange	5c8 5x8
Talbott cherty silt loam, coarse cherty silt loam, gravelly sandy loam 1-20% slopes 20%+ slopes	Shortleaf pine Red oaks Black locust Black walnut Black cherry Loblolly pine Red cedar	55+4 63+7 - - - - 35 *	50-60 60-70 - - - - 30-40	Slight Moderate to Severe	Slight Moderate to Severe	Slight Slight- cool Moderate- hot	Shortleaf pine Red cedar Loblolly pine Black walnut 3/ Black locust 3/ Red oaks 3/	4o7 4r9
Verdigris silt loam 0-1% slopes	Red oaks Cottonwood	75 85	70-80 80-90	Slight	Moderate	Moderate	Cottonwood Green ash Water oaks Sweetgum Pecan Catalpa (post lots)	3w5
soils frequently flooded	Red oaks Cottonwood	75 80	70-80 75-85		Severe	Severe	Cottonwood Pecan	3w6

TABLE 2. SOIL RATINGS FOR WOODLAND USE

Page 10 of 10

Soils	Potential Productivity			Management Problems			Species Suitability for Planting	Ordination Woodland Suitability Group
	Tree Species	Avg. Site Index & Standard Deviation	Range of Site Index	Erosion Hazard	Equipment Restriction	Seedling Mortality		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Viraton cherty silt loam, coarse cherty silt loam 0-20% slopes 20%+ slopes	Shortleaf pine	56 *	50-60	Slight	Slight	Slight	Shortleaf pine	407
	Red oaks	61 *	56-65				Red oaks ^{3/}	
	White oak	58 *	56-65				Black walnut ^{3/}	
	Black walnut	-					Black locust ^{3/}	
	Black locust	-					Red cedar	
	Black cherry	-					Loblolly pine	479
	Red cedar	35 *	30-40	Moderate to Severe	Moderate to Severe	Slight-cool to Moderate-hot		
	Shortleaf pine	66+2	60-70	Slight	Slight	Slight		307
	Red oaks	70 *	66-75					379
	Red cedar	45 *	40-50	Moderate to Severe	Moderate to Severe	Slight-cool to Moderate-hot		
Woodson silt loam, silty clay loam 0-3% slopes	Green ash	-		Slight	Moderate	Moderate	Red cedar	5c8
	Red cedar	30	26-35				Green ash	
	Hackberry						Catalpa ^{4/}	
	Catalpa						Osage orange ^{4/}	
	Osage orange							
* Estimated site index based on a similar soil or another species on the same soil. ^{1/} Red oaks include Northern red oak, Southern red oak, black oak and scarlet oak. ^{2/} Underlined species are those selected in determining the site index. ^{3/} Confine to "cool" slopes, coves, benches and slope bases. ^{4/} Field plantings only; do not interplant or underplant.								

Table 3, SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY, is a summary of the most important interpretations for a woodland suitability group of soils.

Column one (1) includes the suitability group symbol and a brief description of the group of soils, including their important hazards and limitations for woodland use and management.

Column two (2) is a tabulation of the soil units within each woodland suitability group.

Column three (3) is a list of some commercially-important tree species which occur on the soils in each suitability group.

Column four (4) shows the site class (site index rounded off to the nearest 10-foot interval) for the most important tree species listed in column three.

Column five (5) lists some of the most important tree species which are suitable for planting or direct seeding on the soils in each suitability group.

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

Page 1 of 6

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitability for Planting
		Tree Species 1/	Site Class	
(1)	(2)	(3)	(4)	(5)
2o7 Loamy soils with high potential productivity; no serious management problems; suitable for southern pines or southern hardwoods.	Ashton silt loam to cherty silt loam, 0-3% slopes, undulating.	Red oaks	80	Black walnut
	Huntington silt loam to gravelly silt loam, 0-8% slopes	Shortleaf pine	80	Black locust
	Lindsie clay loam to gravelly silt loam, 0-8% slopes, undulating.	Cottonwood	90	Sycamore 4/
	Razort silt loam to gravelly fine sandy loam, 0-8% slopes, undulating.	Sycamore	85	Cottonwood 4/
	Staser silt loam to gravelly silt loam, 0-3% slopes.	Sweetgum	80	Red oaks
		White oak	75	Shortleaf pine
		Loblolly pine	-	Loblolly pine
		Black locust	-	Shumard oak
		Black walnut	-	White oak
		Black cherry	-	White ash
		White ash	-	
		Water oaks	-	
		Shumard oak	-	
3o7 Loamy upland soils with moderately high productivity; no serious management problems; suitable for southern pines or upland hardwoods.	Baxter silt loam, 0-20% slopes, slightly or moderately eroded.	Shortleaf pine	70	Black walnut 3/
	Cumberland silt loam to fine gravelly silt loam, 0-12% slopes, slightly or moderately eroded.	Red oaks	70	Black locust 3/
	Decatur silt loam to cherty silt loam, 1-20% slopes, slightly or moderately eroded.	Red cedar	50	Red oaks 3/
	Dewey silt loam to cherty silt loam, 1-20% slopes, slightly or moderately eroded.	Loblolly pine	-	Shortleaf pine
	Elk silt loam to gravelly silt loam, 1-12% slopes, slightly or moderately eroded.	Black walnut	-	Red cedar
	Emory silt loam to cherty silt loam, 0-12% slopes, slightly or moderately eroded.	Black locust	-	Loblolly pine
	Fayetteville fine sandy loam to loamy fine sand, 1-20% slopes, slightly or moderately eroded.	Black cherry	-	
	Fullerton silt loam to cherty silt loam, 0-20% slopes, slightly or moderately eroded.	White oak	-	
	Greendale cherty silt loam, 0-20% slopes, slightly or moderately eroded.			
	Minvale silt loam to cherty silt loam, 1-20% slopes, slightly or moderately eroded.			
	Newtonia silt loam, 0-12% slopes, slightly or moderately eroded.			
	Pembroke silt loam to cobbly fine sandy loam, 1-12% slopes, slightly or moderately eroded.			
	Pickwick silt loam, 1-8% slopes, slightly or moderately eroded.			
	Viraton silt loam, 0-20% slopes, slightly or moderately eroded.			
3x8 Stony loamy soils with moderately high productivity; moderate to severe erosion hazards and equipment limitations and moderate seedling mortality on hot exposures; suitable for southern pines or upland hardwoods.	Fayetteville stony fine sandy loam, 0-20% slopes and 20%+ slopes, slightly or moderately eroded.	Shortleaf pine	70	Black walnut 3/
		Red oaks	70	Black locust 3/
		Red cedar	50	Red oaks 3/
		Loblolly pine	-	Shortleaf pine
		Black walnut	-	Red cedar
		Black locust	-	Loblolly pine
		Black cherry	-	
		White oak	-	

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

Page 2 of 6

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitability for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
<u>3w5</u> Seasonally wet soils with moderately high potential productivity; moderate equipment limitations and moderate seedling mortality; suitable for southern hardwoods.	<u>Newark</u> silt loam, 0-3% slopes. <u>Sloan</u> silt loam, 0-3% slopes. <u>Verdigris</u> silt loam, 0-1% slopes	Sweetgum Cottonwood Sycamore Shumard oak Water oaks Green ash Red oaks	80 90 85 80 80 - -	Shumard oak Cottonwood $\frac{4}{4}$ Sycamore $\frac{4}{4}$ Sweetgum Green ash Water oaks
<u>3w6</u> Excessively wet soils with moderately high potential productivity; severe seedling mortality and equipment limitations; best suited for southern hardwoods.	<u>Melvin</u> silt loam, 0-3% slopes undulating. <u>Verdigris</u> silt loam, 0-1% slopes, frequently flooded.	Cottonwood Sycamore Shumard oak Sweetgum Water oaks Pecan	80 80 75 80 80 -	Shumard oak Cottonwood $\frac{4}{4}$ Sycamore $\frac{4}{4}$ Sweetgum Water oaks Green ash
<u>3s9</u> Sandy soils with moderately high potential productivity; moderate equipment limitations and severe seedling mortality; suitable for southern pines and hardwoods.	<u>Bruno</u> loamy sand, 0-1% slopes	Sweetgum Cottonwood Sycamore Loblolly pine Shortleaf pine	80 90 80 - -	Cottonwood $\frac{4}{4}$ Sycamore $\frac{4}{4}$ Loblolly pine Shortleaf pine Sweetgum
<u>3f9</u> Stony, cobbly and gravelly loam soils with moderately high potential productivity; severe equipment limitations and seedling mortality; suitable for southern pines and hardwoods.	<u>Elsah</u> stony, cobbly and gravelly silt loam, 0-3% slopes.	Shortleaf pine Red oak White oak Red cedar Loblolly pine Black walnut White ash Black cherry Black locust Sweetgum Sycamore Cottonwood Water oaks River birch	70 70 70 50 - - - - - - - - - -	Shortleaf pine Loblolly pine Red oaks Black walnut Black locust White ash White oak Sweetgum Cottonwood $\frac{4}{4}$ Sycamore $\frac{4}{4}$
<u>3r9</u> Steep loamy soils with moderately high potential productivity; moderate to severe erosion hazard and equipment limitations and moderate seedling mortality on hot exposures; suitable for southern pines and upland hardwoods.	<u>Baxter</u> silt loam, 20%+ slopes, slightly or moderately eroded. <u>Decatur</u> silt loam to cherty silt loam, 20%+ slopes, slightly or moderately eroded. <u>Dewey</u> silt loam to cherty silt loam, 20%+ slopes, slightly or moderately eroded. <u>Fullerton</u> silt loam to cherty silt loam, 20%+ slopes, slightly or moderately eroded. <u>Minvale</u> silt loam to cherty silt loam, 20%+ slopes, slightly or moderately eroded. <u>Viraton</u> silt loam to coarse cherty silt loam, 20%+ slopes, slightly or moderately eroded. <u>Greendale</u> cherty silt loam, 20%+ slopes.	Shortleaf pine Red oaks Red cedar Loblolly pine Black walnut Black locust Black cherry White oak	70 70 50 - - - - -	Black walnut $\frac{3}{3}$ Black locust $\frac{3}{3}$ Red oaks $\frac{3}{3}$ Shortleaf pine Loblolly pine Red cedar

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

Page 3 of 6

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitability for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
<u>4ol</u> Upland soils with moderate potential productivity; no serious management problems; suitable for southern pines and eastern redcedar.	<u>Agnos</u> gravelly loamy fine sand to loam, 0-20% slopes, slightly or moderately eroded. <u>Albertville</u> gravelly loamy fine sand, 1-20% slopes, slightly or moderately eroded. <u>Ashe</u> cherty silt loam, 0-20% slopes, slightly or moderately eroded. <u>Hobson</u> silt loam, 2-14% slopes, slightly or moderately eroded.	Shortleaf pine Red cedar	60 40	Loblolly pine Shortleaf pine Red cedar
<u>4x2</u> Moderately rolling to steep and stony upland soils; moderate to severe erosion hazard, equipment limitations and seedling mortality; suitable for southern pines and eastern redcedar.	<u>Agnos</u> stony loamy fine sand to sandy loam, 0-40% slopes and greater, slightly or moderately eroded.	Shortleaf pine Red cedar	60 40	Loblolly pine Shortleaf pine Red cedar
<u>4r3</u> Steep upland soils with moderate productivity; moderate to severe erosion hazard and equipment limitations and moderate seedling mortality on hot exposures; suitable for southern pines and eastern redcedar.	<u>Agnos</u> gravelly loamy fine sand to loam, 20%+ slopes, slightly or moderately eroded.	Shortleaf pine Red cedar	60 40	Loblolly pine Shortleaf pine Red cedar
<u>4w2</u> Seasonally wet soils with moderate potential productivity; moderate equipment limitations; suitable for southern pines.	<u>Lawrence</u> silt loam, 0-3% slopes. <u>Sango</u> silt loam, 0-3% slopes.	Shortleaf pine Red cedar Red oak	60 40 60	Shortleaf pine Red cedar Loblolly pine
<u>4s3</u> Sandy soils; moderate potential productivity; severe seedling mortality and moderate to severe erosion hazard and equipment limitations; suitable for southern pines and eastern redcedar.	<u>Pineville</u> loamy fine sand, 0-20% slopes and 20%+ slopes, slightly or moderately eroded.	Shortleaf pine Red cedar	60 40	Loblolly pine Shortleaf pine Red cedar
<u>4w5</u> Seasonally wet soils with moderate potential productivity; moderate equipment limitations and seedling mortality; suitable for southern hardwoods.	<u>Dunning</u> silt loam to silty clay loam, 0-3% slopes undulating.	Water oaks Sweetgum Shumard oak Cottonwood Sycamore Cow oak Overcup oak Green ash	70 70 70 80 - - - -	Shumard oak Water oaks Cottonwood $\frac{4}{-}$ Sycamore $\frac{4}{-}$ Sweetgum Green ash
<u>4w6</u> Excessively wet soils with moderate potential productivity; severe equipment limitations and seedling mortality; suitable for southern hardwoods.	<u>Dunning</u> silty clay, 0-3% slopes. <u>Robertsville</u> silt loam, 0-3% slopes.	Water oaks Sweetgum Shumard oak Cottonwood Sycamore Cow oak Overcup oak Green ash	70 70 70 80 - - - -	Shumard oak Water oaks Cottonwood $\frac{4}{-}$ Sycamore $\frac{4}{-}$ Sweetgum Green ash

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

Page 4 of 6

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitability for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
4o7 Upland soils with moderate productivity; no serious management problems; suitable for southern pines and upland hardwoods.	Baxter cherty silt loam, 0-20% slopes, slightly to moderately eroded.	Shortleaf pine	60	Shortleaf pine
	Captina silt loam to cherty silt loam, 0-12% slopes, slightly or moderately eroded.	Red oaks	70	Loblolly pine
	Christian silt loam to cherty silt loam, 1-20% slopes, slightly or moderately eroded.	Red cedar	40	Red cedar
	Fullerton silt loam to coarse cherty silt loam, 0-20% slopes, slightly or moderately eroded.	Black walnut	-	Black walnut 3/
	Jay silt loam to silty clay loam, 1-12% slopes, slightly or moderately eroded.	Black locust	-	Black locust 3/
	Landisburg silt loam to cherty silt loam, 1-12% slopes, slightly or moderately eroded.	White oak	-	Red oaks 3/
	Lebanon silt loam, 0-14% slopes, slightly or moderately eroded.	Black cherry	-	
	Locust fine sandy loam to gravelly loam, 0-20% slopes, slightly to moderately eroded.	Loblolly pine	-	
	Russellville silt loam, 0-12% slopes, slightly to moderately eroded.			
	Talbot loam to coarse cherty silt loam, 1-20% slopes, slightly or moderately eroded.			
	Viraton silt loam to coarse cherty silt loam, 0-20% slopes, slightly or moderately eroded.			
4x8 Stony upland soils with moderate potential productivity; moderate to severe erosion hazards and equipment limitations and moderate seedling mortality on hot exposures; suitable for southern pines and upland hardwoods.	Captina stony loam, 1-14% slopes, slightly or moderately eroded.	Shortleaf pine	60	Loblolly pine
	Christian stony sandy loam to stony loamy fine sand, 1-20% slopes and greater, slightly or moderately eroded.	Red oaks	60	Shortleaf pine
	Locust stony fine sandy loam, 1-20% slopes, slightly to moderately eroded.	Red cedar	40	Red oaks 3/
		Black walnut	-	Black walnut 3/
		Black locust	-	Black locust 3/
		Sweetgum	-	Red cedar
4f8 Moderately rolling to steep loamy upland soils with coarse fragments in the profile; moderate potential productivity; moderate to severe erosion hazards, equipment limitations and seedling mortality; suited to southern pines and upland hardwoods and eastern redcedar.	Clarksville cherty silt loam, 0-40% slopes; slightly to moderately eroded.	Shortleaf pine	60	Loblolly pine
	Coulstone cherty silt loam, 0-40% slopes, slightly to moderately eroded.	Red oaks 3/	60	Shortleaf pine
	Nixa silt loam to cherty silt loam, 1-20% slopes, slightly to moderately eroded.	White oak 3/	60	
		Red cedar	40	
		Black walnut 3/	-	
		Black locust 3/	-	
		Loblolly pine	-	
		Black cherry 3/	-	
4w8 Seasonally wet soils with moderate potential productivity; moderate equipment limitations and seedling mortality; suitable for southern pines and hardwoods.	Samba silty clay (mounded) to silt loam, 0-3% slopes.	Water oaks	70	Sweetgum
	Sloan silt loam, silt loam (mounded), silty clay, silty clay (mounded), 0-3% slopes.	Sweetgum	70	Loblolly pine
		Loblolly pine	70	Shortleaf pine
		Shortleaf pine	60	Red cedar
				Red oaks 3/
				Black locust 3/
				Black walnut 3/

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

Page 5 of 6

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitability for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
4r9 Steep loamy upland soils with moderate potential productivity; moderate to severe erosion hazard and equipment limitations and moderate seedling mortality on hot exposures; suitable for southern pines and upland hardwoods.	Baxter silt loam to coarse cherty silt loam, 20%+ slopes, slightly to moderately eroded. Christian fine sandy loam to gravelly fine sand, 20%+ slopes, slightly to moderately eroded. Fullerton silt loam to coarse cherty silt loam, 20%+ slopes, slightly to moderately eroded. Locust fine sandy loam to gravelly loam, 20%+ slopes, slightly to moderately eroded. Talbot silt loam to coarse cherty silt loam, 20%+ slopes, slightly to moderately eroded. Viraton cherty silt loam, 20%+ slopes, slightly to moderately eroded.	Shortleaf pine Red oak Red cedar Black walnut Black locust White oak Black cherry Loblolly pine	60 70 40 - - - - -	Shortleaf pine Loblolly pine Black walnut 3/ Black locust 3/ Red oak 3/ Red cedar
5o1 Upland loamy soils with low potential productivity; no serious management problems; best suited for southern pines and eastern redcedar.	Ashe cherty silt loam, 0-20% slopes. Bates fine sandy loam, 0-12% slopes, slightly to moderately eroded. Christian fine sandy loam, 3-12% slopes, severely eroded. Mountview silt loam, 0-12% slopes, slightly to moderately eroded. Sallisaw silt loam to gravelly silt loam, 0-8% slopes.	Shortleaf pine Red cedar	50 30	Shortleaf pine Loblolly pine Red cedar
5x2 Stony upland soils with low potential productivity; moderate to severe erosion hazard, equipment limitations and seedling mortality; best suited for southern pines and eastern redcedar.	Conasauga stony sandy loam, 1-20% slopes and greater, slightly to moderately eroded. Colbert stony fine sandy loam and stony silt loam, 1-20% slopes and greater, slightly to moderately eroded.	Shortleaf pine Red cedar Loblolly pine	50 30 -	Loblolly pine Shortleaf pine Red cedar
5c2 Clayey upland soils with low potential productivity; moderate to severe erosion hazard, equipment limitations and seedling mortality; best suited for southern pines and eastern redcedar.	Conasauga silty clay loam to gravelly fine sandy loam, 0-40% slopes, slightly to moderately eroded. Colbert silt loam to cherty silt loam, 1-40% slopes, slightly to moderately eroded.	Shortleaf pine Red cedar Loblolly pine	50 30 -	Loblolly pine Shortleaf pine Red cedar
5d2 Moderately rolling to steep shallow upland soils with low potential productivity; moderate to severe erosion hazard, equipment limitations and seedling mortality; suitable for southern pines and eastern redcedar.	Corydon silt loam to stony silty clay loam, 1-40% slopes, slightly to moderately eroded.	Shortleaf pine Red cedar	50 30	Loblolly pine Shortleaf pine Red cedar
5f2 Upland soils with coarse stony fragments; with low potential productivity; slight to moderate erosion hazard and moderate to severe seedling mortality; suitable for southern pines and eastern redcedar.	Craig silt loam to cherty silt loam, 0-8% slopes, slightly to moderately eroded. Eldorado cherty silt loam, 1-20% slopes, slightly to moderately eroded.	Shortleaf pine Red cedar Loblolly pine	50 30 -	Loblolly pine Shortleaf pine Red cedar

TABLE 3. SOIL GROUPINGS ACCORDING TO WOODLAND SUITABILITY

Page 6 of 6

Woodland Suitability Group (Symbol and Description)	Soils	Productivity		Species Suitability for Planting
		Tree Species	Site Class	
(1)	(2)	(3)	(4)	(5)
<u>5f3</u> Soils with fragments of sandstone and shale; with low potential productivity; slight to moderate equipment limitations and severe seedling mortality; suitable for southern pines and eastern redcedar.	Culleoka flaggy silt loam, 1-20% slopes, slightly to moderately eroded.	Shortleaf pine Red cedar Loblolly pine	50 30 -	Loblolly pine Shortleaf pine Red cedar
<u>5c5</u> Clayey soils with low potential productivity; moderate seedling mortality; suited to selected hardwoods.	Cherokee silt loam, 0-1% slopes. Gerald silt loam, 0-1% slopes.	Water oaks Sweetgum Green ash Hackberry Catalpa Osage orange	50 50 - - - -	Green ash Catalpa <u>4</u> / Osage orange <u>4</u> / -
<u>5x8</u> Moderately rolling to steep stony upland soils with low potential productivity; moderate to severe erosion hazard, equipment limitation and seedling mortality; suited to eastern redcedar and selected hardwoods.	Summit stony silty clay loam, 0-40% slopes, slightly to moderately eroded.	Red cedar Water oaks Hackberry Green ash	30 - - -	Red cedar Green ash Catalpa <u>4</u> / Osage orange <u>4</u> / -
<u>5c8</u> Clayey soils with low potential productivity; moderate equipment limitations and seedling mortality; suited to eastern redcedar and selected hardwoods.	Summit silty clay loam, 0-3% slopes. Woodson silt loam to silty clay loam, 0-3% slopes.	Red cedar Water oaks Hackberry Green ash	30 - - -	Red cedar Green ash Catalpa <u>4</u> / Osage orange <u>4</u> / -
<u>5d9</u> Shallow clayey soils with rock outcroppings; low potential productivity; slight to severe erosion hazard, equipment limitations, and seedling mortality; best suited for eastern redcedar, shortleaf pine and selected hardwoods.	Gasconade rocky silty clay, gravelly silty clay loam, stony silty clay loam, 1-20% slopes, slightly to severely eroded. Sogn rocky silty clay, gravelly silty clay loam, stony silty clay loam, 1-20% slopes, slightly to severely eroded.	Shortleaf pine Red cedar Hackberry White ash Native vegetation	50 and less 30 and less - - -	Red cedar Shortleaf pine Black locust <u>3</u> / White ash Native vegetation
<u>1</u> / Red oaks include Northern red oak, Southern red oak, black oak and scarlet oak.				
<u>3</u> / Confine to "cool" slopes, coves, benches and slope bases.				
<u>4</u> / Field plantings only; do not interplant or underplant.				

